REMARKS

Claims 17-22 have been canceled. Claims 1-16, 23, 25, 28 and 30-32 are pending, but stand rejected as discussed more fully below. Claims 24, 26, 27 and 29 are also pending but stand objected to, but would be allowable if rewritten in independent form. Applicants thank the Examiner for the notice of allowable subject matter.

Claims 1 and 8 have been amended to help more particularly define and distinctly claim the subject matter of the invention. Claims 24, 25, 27, 29, 30 and 32 have been amended to correct dependencies to to incorrect claim numbering. The amendments serve to clarify and distinguish the claimed subject matter.

The foregoing amendments are taken in the interest of expediting prosecution and there is no intention of surrendering any range of equivalents to which Applicant would otherwise be entitled in view of the prior art.

By amending the application, the Applicants do not concede that the patent coverage available to them would not extend as far as the original claim. Rather, Applicants reserve the right to file a continuation application to pursue the breadth of the claims as filed. Applicants believe that the Examiner has not made a sufficient showing of inherency of the teachings of the asserted prior art, especially given the lack of teachings in the cited references of the properties that Applicants have recited in their claims.

Further, by the present amendment, it does not follow that the amended claims have become so perfect in their description that no one could devise an equivalent. After amendment, as before, limitations in the ability to describe the present invention in language in the patent claims naturally prevent the Applicants from capturing every nuance of the invention or describing with complete precision the range of its novelty or every possible equivalent. See, Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 62 USPQ2d 1705 (2002). Accordingly, the foregoing amendments are made specifically in the interest of expediting prosecution and there is no intention of surrendering any range of equivalents to which Applicants would otherwise be entitled.

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Applicant respectfully submits that claims 1-16 and 23-32 are now in condition for allowance.

No new subject matter has been added. Support for the amendments to the claims can be found throughout the specification as originally filed and specifically in the specification at, for example page 24, lines 4-15 and page 25, lines 7-17.

In view of the claim amendments and following remarks, Applicant respectfully requests allowance of claims 1-16 and 23-32.

Formal Matters

Applicant erroneously numbered the added claims 20-29 with the amendment of 12-18-02. These claims are herein renumbered as claims 23-32 with amendments being made to the dependencies of these claims.

Objections to Claims

Claims 24, 26, 27, and 29 are objected to as being dependent on a rejected base claim, but would be allowable if rewritten in independent form.

Applicants respectfully draw the Examiner's attention to claim 26, which was originally presented, and remains, in independent form. Claim 27 depends from independent claim 26. Thus, Applicants submit that claims 26 and 27 are in allowable form and request that the objection be withdrawn.

The Office Action stated the claim 29 adds no limitations to the claim from which it depends and should be amended or cancelled. Applicants traverse this objection. Claim 29 adds the limitation that the B block is a polymeric block of (2-methoxyethyl)acrylate. This feature is not recited in independent claim 28 from which claim 29 depends. Thus, claim 29 does in fact further limit the base claim from which it depends and is proper. Applicants request the objection to claim 29 based on this argument be removed.

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Rejecti n f Claims

Claims 1-16 stand rejected under 35 U.S.C. § 112 as indefinite. Claims 8-16, 23, 25, 28 and 30-32 stand rejected under 35 U.S.C. § 102(b) as anticipated by, or alternatively under 35 U.S.C. § 103(a) as obvious over Matyjaszewski. Claims 8-16, 23, 25, 28 and 30-32 stand rejected under 35 U.S.C. § 102(e) as anticipated by, or alternatively under 35 U.S.C. § 103(a) as obvious over Klaemer. Claims 24, 26, 27 and 29 are objected to. Applicant respectfully traverses the rejections based on the following remarks.

Rejection of Claims 1-16 under 35 U.S.C. §112

With regard to claims 1 and 8, the Office Action states that the term "vinyl alcohol" is unclear as used in the claims. Applicants have amended claims 1 and 8 to recite that the polymer comprises at least one unit selected the listed group.

Applicant respectfully asserts that these amendments clarify the claims and obviate the pending rejections.

In view of the amendments Applicant respectfully requests that the Examiner withdraw the § 112 rejections of claims 1-16.

102 and 103 Rejections

Claims 8-16, 23, 25, 28 and 30-32 stand rejected under § 102 as anticipated by, or alternatively under § 103 as obvious over the cited references. Applicant submits that the claims are not anticipated or made obvious by the reference because the reference does not disclose or suggest every feature of claims 8-16, 23, 25, 28 and 30-32.

Matyjaszewski

The Office Action points to Example 15 of Matyjaszewski as disclosing the claimed features of the invention. Example 15 of Matyjaszewski discloses a periodic copolymer of styrene and maleic anhydride. The resulting polymer from this example has blocks of styrene and blocks of styrene alternating with maleic anhydride. Matyjaszewski defines alternating or periodic copolymers in column 27, line 34 - column 28, line 20 as having the structure $(M^1$-

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$M^2)_p$, where M^1 and M^2 are different radically polymerizable monomers and p is the degree of polymerization. *See* Matyjaszewski Col. 28, lines 1-10. Matyjaszewski also shows a periodic or alternating copolymer as well as a random copolymer in Figure 1. This drawing displays a periodic copolymer as having alternating units in an ordered fashion, as compared to a random copolymer also shown in the Figure.

Independent claims 8, 23, 28 and 31 require that the block copolymer comprises at least one random block comprised of two or more monomers. This feature is not shown or suggested in example 15 of Matyjaszewski. The periodic or alternating copolymer disclosed in example 15 does not contain a random block. The blocks containing styrene and maleic anhydride are described as having an alternating structure. That structure is shown in Figure 1, and is not random. In fact, Matyjaszewski explicitly defines random copolymers differently than periodic or alternating copolymers. Thus, Matyjaszewski is disclosing a polymer with blocks each having an order in them, and no random blocks. For at least this reason, independent claims 8, 23, 28 and 31 and their dependent claims are patentable over Matyjaszewski.

Also, independent claims 23 and 28 require that at least one of the two or more monomers in the random block is hydrophilic and has a log p value less than or equal to 1, and at least one of the two or more monomers in the random block is hydrophobic, and has a log p value greater than or equal to 2, such that an absolute difference in log p between the hydrophobic and hydrophilic monomers is at least about 1.0. As discussed above, Applicants assert that example 15 of Matyjaszewski does not disclose or suggest the use of a random block in the polymer made. However, even if it could be thought of as disclosing or suggesting a random block, the styrene and maleic anhydride units do not meet the further requirements of these claims. As disclosed at page 23, line 22 of the Specification of the present invention, the log p value of styrene is about 2.95. In addition, the Specification lists a web site for estimating log p values. "Some of the log P values in this application were estimated from the web site http://esc.syrres.com/interkow/kowdemo.htm, which provides an estimated log P value for molecules by simply inserting the CAS registry number or a chemical notation." *Specification* Page 15, Lines 17-19. That website discloses a SMILES notation for maleic anhydride of O=ClOC(=O)C=Cl. Plugging that notation into the calculator estimates a log p value for maleic anhydride at 1.62. Printed pages of the calculation just performed are attached hereto as

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Appendix A. The log p values of the monomers disclosed in example 15 of Matyjaszewski do not meet the log p requirements of independent claims 23 and 28. The random block does not contain a monomer with a log p value less than 1. For at least this reason, independent claims 23, 28 and their dependent claims are patentable over Matyjaszewski.

Furthermore, independent claim 23 requires that the block copolymer have the structure $(AB)_n$-Core, where A and B are polymeric blocks and Core is a non-polymeric linking core. In addition to the reasons discussed above, claim 28 is not anticipated or made obvious by Matyjaszewski , because the block copolymer in example 15 of Matyjaszewski does not disclose or suggest a core in the copolymer. For at least this reason, independent claim 23 and its dependent claims are patentable over Matyjaszewski.

Finally, independent claim 31 requires the B block to be a polymeric block of (2-methoxyethyl)acrylate. In addition to the reasons discussed above, claim 31 is not anticipated or made obvious by Matyjaszewski , because the block copolymer in example 15 of Matyjaszewski does not disclose or suggest a B block of (2-methoxyethyl acrylate). For at least this reason, independent claim 31 and its dependent claim are patentable over Matyjaszewski.

In addition to not disclosing or suggesting each feature of the present invention, there is a lack of motivation to modify Matyjaszewski to achieve the present invention. For example, nothing in Matyjaszewski suggests adjusting achieving a desired solubility level for a block copolymer by using at least one random block having at least one hydrophobic monomer and at least one hydrophilic monomer and designing the ratio and type of monomers used the random block to achieve the desired solubility in alcohol or water for the block copolymer, or the use of a block of (2-methoxyethyl)acrylate as a B block.

Because Matyjaszewski does not teach or suggest each feature of the presently claimed invention and there is no motivation to modify the structure of Matyjaszewski to meet the claimed invention, the Examiner fails to establish a prima facie case of obviousness. See MPEP §2143. Accordingly, Applicants respectfully request that this rejection be withdrawn.

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Klaerner

The Office Action points to Paragraph 203 of Klaerner as disclosing the claimed features of the invention. The example of Klaerner discloses a block copolymer having the structure A-R-B as defined in Klaerner at paragraph 113. A single site initiator/control agent adduct is used in the reaction. A block of styrene is first polymerized, then acrylic acid and styrene are added to grow a random block of styrene and acrylic acid. Finally, butyl acrylate is added and polymerized. The resulting polymer has a block of styrene, a random block of styrene and acrylic acid stemming from one end of the styrene block, and a block of butyl acrylate stemming from the end of the random block. This is an A-R-B block copolymer.

In contrast, independent claims 8, 23, 28 and 31 require that the block copolymer has the structure A-B-A, where A and B are polymeric blocks or the formula $(AB)_n$-Core, where A and B are polymeric blocks and Core is a non-polymeric linking core. These structures are not disclosed in Klaerner. The copolymer disclosed in the example does not contain a repeating A block. Thus, Klaerner is disclosing a polymer with the structure A-R-B, and not A-B-A or $(AB)_n$-Core. For at least this reason, independent claims 8, 23, 28 and 31 and their dependent claims are patentable over Klaerner.

Also, independent claim 31 requires the B block to be a polymeric block of (2-methoxyethyl)acrylate. In addition to the reasons discussed above, claim 31 is not anticipated or made obvious by Klaerner, because the block copolymer in the example of Klaerner does not disclose or suggest a B block of (2-methoxyethyl acrylate). For at least this reason, independent claim 31 and its dependent claim are patentable over Klaerner.

In addition to not disclosing or suggesting each feature of the present invention, there is a lack of motivation to modify Klaerner to achieve the present invention. For example, nothing in Klaerner suggests adjusting achieving a desired solubility level for a block copolymer by using at least one random block having at least one hydrophobic monomer and at least one hydrophilic monomer and designing the ratio and type of monomers used the random block to achieve the desired solubility in alcohol or water for the block copolymer, or the use of a block of (2-methoxyethyl)acrylate as a B block.

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Because Klaerner does not teach or suggest each feature of the presently claimed invention and there is no motivation to modify the structure of Klaerner to meet the claimed invention, the Examiner fails to establish a prima facie case of obviousness. See MPEP §2143. Accordingly, Applicants respectfully request that this rejection be withdrawn.

In light of the fact that these claims contain subject matter that defines over the art of record, Matyjaszewski and Klaerner do not anticipate or make obvious independent claims 8, 23, 28 or 31. In addition, since the claims have been amended to overcome the § 112 rejections, independent claims 1 and 8 stand in allowable form. Applicant respectfully requests that the § 102 and § 103 rejections be withdrawn and that the rejected claims be allowed.

The Claims That Depend on Claims 8, 23, 28 and 31 Are Allowable

Because claims 9-16 are dependent on and incorporate all of the limitations of independent claim 8, as well as recite further limitations, the above arguments apply a fortiori to these grounds for rejection. Because claims 24 and 25 are dependent on and incorporate all of the limitations of independent claim 23, as well as recite further limitations, the above arguments apply a fortiori to these grounds for rejection. Because claims 29 and 30 are dependent on and incorporate all of the limitations of independent claim 28, as well as recite further limitations, the above arguments apply a fortiori to these grounds for rejection. Because claim 32 is dependent on and incorporates all of the limitations of independent claim 31, as well as recites further limitations, the above arguments apply a fortiori to this ground for rejection. Thus, claims 9-16, 24, 25, 29, 30 and 32 are patentable over the asserted references, and Applicants respectfully request allowance of these claims.

Conclusion

Attached hereto is Appendix A showing the log p value for maleic anhydride as discussed above. The attached page is captioned "**Appendix A.**"

In view of Applicants amendments and remarks, the Examiner's rejections are believed to be rendered moot. Accordingly, Applicants submit that the present application is in condition for allowance and requests that the Examiner pass the case to issue at the earliest convenience.

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Should the Examiner have any question or wish to further discuss this application, Applicant requests that the Examiner contact the undersigned at (408) 720-2598.

If for some reason Applicants have not requested a sufficient extension and/or have not paid a sufficient fee for this response and/or for the extension necessary to prevent the abandonment of this application, please consider this as a request for an extension for the required time period and/or authorization to charge Deposit Account No. 50-0496 for any fee which may be due.

FAX RECEIVED
JUL 2 3 2003
GROUP 1700

Respectfully submitted,

SYMYX TECHNOLOGIES, INC.

Date: _____July 22,2003_____

By: _____
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APPENDIX A

Attached hereto are printed pages from the website http://esc.syrres.com/interkow/kowdemo.htm showing the log p value for maleic anhydride

Int ractive LogKow (KowWin) Demo

Products & Services
Estimation Software
Databases
Expert Consulting
Toxicology & Risk Assessment
Environmental Chemistry
Courses

FREE Demos & Databases
EFDB
TSCATS
KOW
Ozone Depletion/ Global Warming

What's New
Software Updates
Press Releases
Recent Reports/ Presentations
Research Publications
Of Interest

Environmental Tidbits
Career Center
Related Links

This on-line interactive demo will calculate log P (octanol-water partition coefficient) and retrieve experimental log P data from our experimental database of 13,000 compounds. *If experimental data is available, it is listed below the estimation.* The chemical structure must be entered as a SMILES notation (there is a 100 character limit for this demo) or CAS number (see below). Although this on-line demo is a working version of SRC's LOGKOW / KOWWIN Program, it does not contain the advanced features found in the actual program. Information on how to create a SMILES notation and a list of example SMILES notations are also available. Also, see links below to other Internet log P calculators.

Please Note: This on-line demo is intended to demonstrate the methodology used in the KowWin program.

SMILES Notation:	O=C1OC(=O)C=C1

Submit SMILES

Instead of entering a SMILES Notation, you can also enter a CAS (Chemical Abstract Service) Registry number. However, the CAS number must be in our SMILECAS Database which contains more than 103,000 chemicals.

CAS Number:	

Submit CAS

Other Internet log P calculators:
Interactive Analysis's LogP Program – an excellent neural network implementation of E-State indices designed by IA President Marc Parham.

Daylight's ClogP Program - follow their On-line Demo links to the ClogP demo.

VCC-Lab Program - a neural network implementation of E-State indices ... also compares logP and logS calculated using several different programs

LogKow Page

Estimation Software Page

Have you signed our Guest Book yet?

Example SMILES Notations

Alkanes | Haloalkanes | Aldehydes | Ketones | Dicarbonyls | Alcohols | Glycols Ethers | Furans | Halogenated Ethers | Epoxides | Acids | Esters | Hydroperoxides Alkenes | Alkynes |Haloalkenes | Sulfur Compounds | Nitrogen Compounds | Nitriles | Aromatic Nitrogen Compounds | Nitrates | Nitrites | Thiocarbamates | Carbamates | Phosphorus Compounds | Organo-Silicon/Selenium & Metals | Aromatic Compounds Biphenyls | Polyaromatics | Return to the SMILECAS Database Page

Alkanes

Methane	C
Ethane	CC
Propane	CCC
n-Butane	CCCC
2-Methylpropane	CC(C)C
n-Pentane	CCCCC
2-Methylbutane	CC(C)CC
2,2-Dimethylpropane	CC(C)(C)C
n-Hexane	CCCCCC
2-Methylpentane	CC(C)CCC
3-Methylpentane	CCC(C)CC
2,2-Dimethylbutane	CC(C)(C)CC
2,3-Dimethylbutane	CC(C)C(C)C
n-Heptane	CCCCCCC
2,4-Dimethylpentane	CC(C)CC(C)C
2,2,3-Trimethylbutane	CC(C)(C)C(C)C
n-Octane	CCCCCCCC
2,2,4-Trimethylpentane	CC(C)(C)CC(C)C
2,2,3,3-Tetramethylbutane	CC(C)(C)C(C)(C)C
Cyclopropane	C1CC1
Cyclobutane	C1CCC1
Cyclopentane	C1CCCC1
Cyclohexane	C1CCCCC1
Methylcyclohexane	CC1CCCCC1
Cycloheptane	C1CCCCCC1
Isopropylcyclopropane	C1CC1C(C)C
Cyclooctane	C1CCCCCCC1
1,1,3-Trimethylcyclohexane	CC1(C)CC(C)CCC1

K t ne

Acetone	CC(=O)C
2-Butanone	CC(=O)CC
2-Pentanone	CC(=O)CCC
3-Pentanone	CCC(=O)CC
2-Hexanone	CC(=O)CCCC
3-Hexanone	CCC(=O)CCC
2-Heptanone	CC(=O)CCCCC
3,3-Dimethyl-2-butanone	CC(=O)C(C)(C)C
2,4-Dimethyl-3-pentanone	CC(C)C(=O)C(C)C
4-Methyl-2-pentanone	CC(=O)CC(C)C
2,6-Dimethyl-4-heptanone	CC(C)CC(=O)CC(C)C
Methyl vinyl ketone	C=CC(=O)C
Ketene	C=C=O
Methyl ketene	CC=C=O
Ethyl ketene	CCC=C=O
Cyclobutanone	C1C(=O)CC1
Cyclopentanone	C1C(=O)CCC1
Cyclohexanone	C1C(=O)CCCC1
2,4-Pentanedione	CC(=O)CC(=O)C
2,5-Hexanedione	CC(=O)CCC(=O)C
Hydroxyacetone	OCC(=O)C
Methoxyacetone	COCC(=O)C
1,1,1-Trifluoroacetone	CC(=O)C(F)(F)F
4-Hydroxy-4-methyl-2-pentanone	CC(=O)CC(C)(O)C
3H-Furan-2-one	O=C1OC=CC1

Dicarbonyls

cis-3-Hexene-2,5-dione	CC(=O)C=CC(=O)C
trans-3-Hexene-2,5-dione	CC(=O)C=CC(=O)C
Glyoxal	O=CC=O
Methylglyoxal	O=C(C)C=O
Diacetyl	CC(=O)C(=O)C
Maleic anhydride	O=C1OC(=O)C=C1

Alcohols

Methanol	CO
Ethanol	CCO
1-Propanol	CCCO
2-Propanol	CC(O)C
1-Butanol	CCCCO
2-Butanol	CCC(O)C

07/16/2003

KowWin (LogKow) Log P Calculation:

```
SMILES : O=C1OC(=O)C=C1
CHEM   :
MOL FOR: C4 H2 O3
MOL WT : 98.06
```

TYPE	NUM	LOGKOW v1.66 FRAGMENT DESCRIPTION	COEFF	VALUE
Frag	2	=CH- or =C< [olefinc carbon]	0.3836	0.7672
Frag	2	-C(=O)O [ester, aliphatic attach]	-0.9505	-1.9010
Factor	1	-C(=O)-C=C-C(=O)- [aliphatic attachs] cor.	1.0235	1.0235
Factor	2	Cyclic ester [di-carbonyl type] correction	0.7500	1.5000
Const		Equation Constant		0.2290

```
                                          Log Kow   =   1.6187
```

LogKow Estimated Log P: 1.62